Prototyping A Dental Electronic Information Resource (DEIR)

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ABSTRACT

The prototyping of a dental electronic information resource (DEIR) using the University of Minnesota's Gopher client/server model is described. The DEIR was developed through a collaborative effort of the School of Dentistry and the University Library at the University of Michigan. The DEIR was prototyped to ascertain the feasibility of an electronic community system containing useful information and knowledge of dentistry. Historically, dentistry has relied on human memory, print, and spoken communication for information storage and exchange. Use of electronic media has been limited.

Gopher software uses hierarchical menus for data organization. DEIR menus mirrored the School of Dentistry's organizational structure. Main menu items included Academic Programs, School Administration, Directories, Library Services, and Other Information Resources. Each item led to submenus. For example, if a user selected School Administration, a menu appeared containing Announcements and Events, Admissions, Alumni Relations & Continuing Education, Computing, Minority Affairs, and Patient Services. Similarly, if Patient Services was selected, a menu displayed General Office, Patient Business Office, Patient/Student Monitoring, and Quality Assurance Programs. Under Quality Assurance Programs, a menu appeared containing Mission Statement, Table of Contents, Risk Management, and Quality Assurance.

The DEIR was prototyped in the Graduate Library on a DEC 5000 (32 Mb of RAM and 1.3 Gb of secondary storage) running Ultrix V4.2 as its operating system. The Library has implemented a Gopher-based system *ULibrary* that provides access to resources such as worldwide online library catalogs, US Census Data for Michigan, Economic Bulletin Board data of the US Department of Commerce, UPI Newswire data, and contents of numerous electronic journals. Gopher software V1.02 is used, and ULibrary contains about 100 Mb of data. The DEIR was a submenu in the Experimental Area of ULibrary. Local customization is possible. ULibrary features include user validation by social security number and file mailing to E-mail addresses. Most Gopher information is in ASCII text format, but images, sounds, and videos can be retrieved if users have the appropriate hardware and software configurations to interpret such files. Gopher software automatically structures menus into a user friendly format. The file and directory structures in Gopher are identical to the file and directory structures of the native operating system.

During pilot testing, the DEIR could be accessed worldwide via the Internet using any Gopher client resident on a local machine or by using a public client located on the ULibrary server. Once connected, navigation and data transmission speeds were dictated by the Internet connection's bandwidth, communication software, and machine processor speed. DEIR storage costs (at Michigan) were estimated to be $1.25/Mb/year. Additional costs could include purchase of licensed data products such as Current Contents or labor costs incurred for data production and management. However, organizations already generate data as an operating expense, and savings can be realized by electronic publishing.

An important feature of a DEIR will be providing access to other DEIR-Gophers, and information servers. As Gopher permits server-to-server connections, dental schools and organizations can point transparently to each other's resources from their local menus. To develop a broad dental user community, information from dental associations, public health agencies, and dental insurance companies needs to be published. A dental association could publish news briefs, a calendar of events, and classified advertisements. The dental division of a state health department might publish Medicaid treatment guidelines, health education materials, and schedules for mobile preventive programs. Dental insurance companies could publish treatment and reimbursement guidelines, lists of insured groups, and dates of educational seminars. Continuous evaluation will be essential to determine if DEIRs are meeting the information needs of their users.

DEIR evolution will be driven by user and developer interests, operational costs, and Gopher-web growth. This prototyping experience confirmed the potential of the Gopher model for information resource development. Internet-linked DEIRs could form the basis for a worldwide electronic community system for dentistry.

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